



State of Utah

GARY R. HERBERT  
Governor

GREG BELL  
Lieutenant Governor

Department of  
Environmental Quality

Amanda Smith  
Executive Director

DIVISION OF AIR QUALITY  
Bryce C. Bird  
Director

M1045/0078  
Task: 5284

RECEIVED

FEB 06 2013

DIV. OF OIL, GAS & MINING

DAQE-AN144990001-12

December 3, 2012

Rick Havenstrite  
Desert Hawk Gold Corp.  
8921 North Indian Trail Road, Suite 288  
Spokane, WA 99208

Dear Mr. Havenstrite:

Re: Approval Order: Approval Order for Gold, Silver, and Copper Mining Operation  
Project Number: N144990001

The attached document is the Approval Order for the above-referenced project. Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is Jon Black, who may be reached at (801) 536-4047.

Sincerely,

Bryce C. Bird  
Director

BCB:JB:sa

cc: Mike Owens  
Tooele County Health Department

APPROVED

FEB 06 2013

DIV. OIL GAS & MINING

**APPROVED**

**FEB 08 2013**

**DIV. OIL GAS & MINING**

**STATE OF UTAH**

**Department of Environmental Quality**

**Division of Air Quality**

**APPROVAL ORDER: Approval Order for Gold, Silver, and  
Copper Mining Operation**

**Prepared By: Jon Black, Engineer**  
**Phone: (801) 536-4047**  
**Email: jblack@utah.gov**

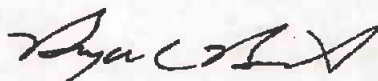
**APPROVAL ORDER NUMBER**

**DAQE-AN144990001-12**

**Date: December 3, 2012**

**Desert Hawk Gold Corp.**  
**Desert Hawk Gold Mine**

**Source Contact:**  
**Rick Havenstrite**  
**Phone: (775) 322-4621**



**Bryce C. Bird**  
**Director**

**RECEIVED**

**FEB 06 2013**

**DIV. OF OIL, GAS & MINING**

**APPROVED**

**FEB 08 2013**

**Abstract**

**DIV. OIL GAS & MINING**

Desert Hawk Gold Corporation (DHG) submitted a Notice of Intent requesting to operate a gold, silver, and copper surface mining facility in Ibapah, Utah. The Desert Hawk mine site will be a typical surface mining operation. The project will consist of three open pit mines. Processing facilities will include a cyanide leach operation for gold and silver recovery. The process will consist of excavation, sizing/ sorting, hauling, bulldozing, blasting, fuel storage, and concurrent reclamation.

The location of the mine is in the portion of Tooele County that is an attainment area of the NAAQS. NSPS 40 CFR 60 Subparts A and LL regulations apply to this source. In addition, NESHAP 40 CFR 63 Subparts A and ZZZZ regulations apply to this source. This source is classified as a minor source and is exempt from the Title V Operating Permit Program.

The potentials to emit from this source, in tons per year, will be as follows:  $PM_{10} = 20.29$ ,  $PM_{2.5}$  (subset of  $PM_{10}$ ) = 4.90,  $NO_x = 43.78$ ,  $SO_2 = 7.52$ ,  $CO = 27.78$ ,  $VOC = 1.37$ , total HAPs = 0.02, and  $CO_2e = 2,097.47$ .

This air quality AO authorizes the project with the following conditions and failure to comply with any of the conditions may constitute a violation of this order. This AO is issued to, and applies to the following:

**Name of Permittee:**

**Permitted Location:**

Desert Hawk Gold Corp.  
8921 North Indian Trail Road  
Suite 288  
Spokane, WA 99208

Desert Hawk Gold Mine  
7172 N. Main St  
Ibapah, UT 84034

**UTM coordinates:** 260,724 m Easting, 4,443,788 m Northing, UTM Zone 12  
**SIC code:** 1041 (Gold Ores)

**Section I: GENERAL PROVISIONS**

- 1.1 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
- 1.2 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- 1.3 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]
- 1.4 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of two (2) years. [R307-401-8]

- 1.5 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
- 1.6 The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
- 1.7 The owner/operator shall comply with UAC R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- 1.8 The owner/operator shall notify the Director in writing when the installation of the equipment in Condition II.A has been completed and is operational. To ensure proper credit when notifying the Director, send your correspondence to the Director, attn: Compliance Section.

If the installation has not been completed within 18 months from the date of this AO, the Director shall be notified in writing on the status of the installation. At that time, the Director shall require documentation of the continuous installation of the operation and may revoke the AO in accordance with R307-401-18.

[R307-401-18]

## **Section II: SPECIAL PROVISIONS**

### **II.A The approved installations shall consist of the following equipment:**

- II.A.1 **Desert Hawk Gold Mine**  
Site-wide Equipment
- II.A.2 **Jaw Crusher**  
One (1) Cone Crusher  
Maximum rated capacity: 300 tons per hour (tph)
- II.A.3 **Cone Crusher**  
Two (2) Cone Crushers  
Maximum rated capacity: 150 tph (each)
- II.A.4 **Diesel Generator**  
One (1) Emergency Diesel Generator  
Maximum rated capacity: 950 kW
- II.A.5 **Diesel Generators**  
Two (2) Diesel Generators  
Maximum rated capacity: 70kW (each)

**APPROVED**

**FEB 08 2013**

**DIV. OIL GAS & MINING**

II.A.6      **Miscellaneous Equipment**  
This operation will utilize conveyors, loaders, dozers or trackhoes for removal, stockpiling, dozing and dumping of ore and overburden material.

II.A.7      **Mesh Screen**  
One (1) Tyler 8 Mesh Screen  
Maximum rated capacity:      300 tph

II.A.8      **Diesel Storage Tank**  
One (1) Diesel Storage Tank  
Maximum capacity:      12,000 gallons

Tank is listed for informational purposes only.

II.A.9      **Diesel Storage Tank**  
One (1) Diesel Storage Tank  
Maximum capacity:      4,000 gallons

Tank is listed for informational purposes only.

**APPROVED**

**FEB 08 2013**

**DIV. OIL GAS & MINING**

**II.B      Requirements and Limitations**

**II.B.1      The Desert Hawk Gold Mine shall be subject to the following:**

II.B.1.a      The owner/operator shall not exceed the following operating limitations:

- A.    2,000,000 tons of mined ore and waste rock production for the Kiewit and Clifton Shears Pits combined per rolling 12-month period.
- B.    18,926 total haul truck\* miles traveled for both Kiewit and Clifton Shears pits combined per rolling 12-month period.

\*Note: Haul trucks are considered any vehicle which transports mined ore and waste rock material in or out of the Kiewit and Clifton Shears Pits.

[R307-401-8]

II.B.1.a.1      To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. Records of mining and haul truck mileage shall be kept for all periods when the plant is in operation. Material mined shall be determined by scale house records. Haul truck mileage shall be determined by multiplying the number of trips each truck makes on a haul road by the mileage (length) of that particular haul road. The records of mining and haul truck mileage shall be kept on a daily basis. Production and haul truck mileage shall be determined by supervisor monitoring and maintaining of an operations log. Records shall include the following:

- A.    The amount of ore and overburden mined each day from each individual surface mine.

- B. The 12-month rolling total of ore and overburden mined from each individual surface mine.
- C. The amount of haul truck mileage each day from each individual surface mine.
- D. The 12-month rolling total of haul truck mileage from each individual surface mine.

[R307-401-8]

II.B.1.b Unless otherwise specified in this AO, the owner/operator shall not allow visible emissions from any source on site to exceed 20 percent opacity. [R307-201-3]

II.B.1.c Unless otherwise specified in this AO, opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. [R307-201-3]

II.B.2 **The Stationary Diesel Engines on site shall be subject to the following:**

II.B.2.a The 950 kW diesel generator shall not exceed 2,400 hours of operation per rolling 12-month period. [R307-401-8]

II.B.2.a.1 To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total for each day of the previous month by the twentieth day of each month using data from the previous 12 months. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log for the generator. [R307-401-8]

II.B.2.b The two 70 kW diesel generators shall not exceed 8,860 hours of total operation combined per rolling 12-month period. [R307-401-8]

II.B.2.b.1 To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total for each day of the previous month by the twentieth day of each month using data from the previous 12 months. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log for each generator. [R307-401-8]

II.B.2.c The owner/operator shall not allow visible emissions from any diesel engine on site to exceed 20 percent opacity. [R307-201-3]

II.B.2.d The sulfur content of any diesel fuel burned in any diesel engine on site shall not exceed 15 ppm. [R307-401-8]

II.B.2.d.1 The sulfur content shall be determined by ASTM Method D2880-71, D4294-89, or approved equivalent. Certification of diesel fuel shall be either by the owner/operator's own testing or by test reports from the diesel fuel marketer. [R307-203-1]

II.B.3 **All Haul Roads and Fugitive Dust Sources on site shall be subject to the following:**

II.B.3.a The owner/operator shall not allow visible emissions from haul roads and fugitive dust sources on site to exceed 20 percent opacity at all times. [R307-205-4]

**APPROVED**

FEB 08 2013

DIV. OIL GAS & MINING

- II.B.3.a.1 Visible emission determinations for fugitive dust emissions from haul-road traffic and mobile equipment in operational areas shall use procedures similar to Method 9. The normal requirement for observations to be made at 15-second intervals over a six-minute period, however, shall not apply. Visible emissions shall be measured at the densest point of the plume but at a point not less than 1/2 vehicle length behind the vehicle and not less than 1/2 the height of the vehicle. [R307-205-4]
- II.B.3.b The owner/operator shall use water application on all storage piles, haul roads, and operational areas when the temperature is above freezing to maintain the opacity limit of Condition II.B.3.a. [R307-401-8]
- II.B.3.b.1 Records of water application shall be kept for all periods when the plant is in operation. The records shall include the following items:
- A. Date and time treatments were made
  - B. Number of treatments made and quantity of water applied
  - C. Rainfall amount received, if any
  - D. Records of temperature, if the temperature is below freezing
- [R307-401-8]
- II.B.3.c The hours of operation for all bulldozers combined at the facility shall not exceed 15,000 hours per rolling 12-month period. [R307-401-8]
- II.B.3.c.1 To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. Hours of operation shall be determined by supervisor monitoring and maintaining of an operations log. The records of operation shall be kept on a daily basis. Records shall include the following:
- A. The number of hours each bulldozer operated each day
  - B. The total hours of operation for all bulldozers each day
  - C. The rolling 12-month total hours of operation for all bulldozers
- [R307-401-8]
- II.B.3.d The owner/operator shall comply with all applicable requirements of R307-205 for Fugitive Emission and Fugitive Dust sources on site. [R307-205]
- II.B.3.e The haul roads shall be maintained with road base material and shall not exceed 7,150 feet in length combined. The vehicle speed along the haul roads shall not exceed 15 miles per hour. The vehicle speed on the haul roads shall be posted, at minimum, on site at the beginning of each haul road so that it is clearly visible from the haul road. [R307-401-8]

**APPROVED**

FEB 08 2013

**DIV. OIL GAS & MINING**

- II.B.3.f The total area of the storage piles shall not exceed 56 acres and overburden storage piles shall not exceed 14 acres. [R307-401-8]
- II.B.3.g The open or disturbed area shall not exceed limits set forth by the Division of Oil, Gas, and Mining without approval from the Director. [R307-401-8]
- II.B.4 **All Explosive Blasting Operations on site shall be subject to the following:**
- II.B.4.a The owner/operator shall conduct wet drilling when drilling holes for explosive blasting. The drill shall include a shroud to control drill cutting scatter at all times of operation. [R307-401-8]
- II.B.4.b The owner/operator shall not blast more than one (1) blast per day and a maximum of 100 blasts per rolling 12-month period. Blasting shall only occur between 12:00 noon and 5:00 pm. [R307-401-8]
- II.B.4.b.1 The owner/operator shall maintain a record of blasting. Records of blasting shall be determined by supervisor monitoring and maintaining of an operations log. Records of blasting shall include the date and time of each blast. [R307-401-8]
- II.B.4.c The owner/operator shall not use more than 7,972 gallons of ammonium nitrate-fuel oil (ANFO) associated fuel per rolling 12-month period. [R307-401-8]
- II.B.4.c.1 To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. The amount of ANFO associated fuel usage shall be determined by assuming 79.7 gallons of ANFO fuel per blast. Records of explosives used shall be determined by purchasing records or maintaining an operations log. [R307-401-8]
- II.B.5 **All Crushers, Screens and Conveyors on site shall be subject to the following:**
- II.B.5.a The owner/operator shall not allow visible emissions from any crusher on site to exceed 10 percent opacity. [40 CFR 60 Subpart LL]
- II.B.5.b The owner/operator shall not allow visible emissions from any screen on site to exceed 10 percent opacity. [40 CFR 60 Subpart LL]
- II.B.5.c The owner/operator shall not allow visible emissions from any conveyor transfer point on site to exceed 10 percent opacity. [40 CFR 60 Subpart LL]
- II.B.5.d The owner/operator shall not allow visible emissions from any conveyor drop point on site to exceed 20 percent opacity. [R307-205-4]
- II.B.5.e The owner/operator shall install water sprays on all crushers, screens, and all unenclosed conveyor transfer points on site to control fugitive emissions. Sprays shall operate as required to maintain the opacity limits listed in this AO when the temperature is above freezing. [R307-401-8]

**APPROVED**

FEB 08 2013

DIV. OIL GAS & MINING

**Section III: APPLICABLE FEDERAL REQUIREMENTS**

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

NSPS (Part 60), A: General Provisions

NSPS (Part 60), LL: Standards of Performance for Metallic Mineral Processing Plants

NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

MACT (Part 63), A: General Provisions

MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Title V (Part 70) area source

**PERMIT HISTORY**

This AO is based on the following documents:

Incorporates

Additional NOI Information dated August 10, 2012

Incorporates

Additional NOI Information dated July 31, 2012

Is Derived From

Notice of Intent dated May 8, 2012

**ADMINISTRATIVE CODING**

The following information is for UDAQ internal classification use only:

Tooele County

CDS B

NSR, MACT (Part 63), NSPS (Part 60), Title V (Part 70) area source

**APPROVED**

**FEB 08 2013**

**DIV. OIL GAS & MINING**

# ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent - 40 CFR Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - 40 CFR 52.21 (b)(49)(i)
GWP	Global Warming Potential - 40 CFR Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/HR	Pounds per hour
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO <sub>x</sub>	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM <sub>10</sub>	Particulate matter less than 10 microns in size
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO <sub>2</sub>	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds

**APPROVED**

**FEB 08 2013**

**DIV. OIL GAS & MINING**